

**EXHIBIT 11**  
[REDACTED VERSION OF  
DOCUMENT SOUGHT TO BE SEALED]

1 UNITED STATES DISTRICT COURT  
2 NORTHERN DISTRICT OF CALIFORNIA  
3 SAN FRANCISCO DIVISION  
4

5 IN RE SEAGATE TECHNOLOGY, LLC  
6 LITIGATION,

\_\_\_\_\_ No. 3:16-cv-00523 JCS

7 CONSOLIDATED ACTION  
8  
9 \_\_\_\_\_

10 HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY  
11

12 Videotape Deposition of Andrew Hospodor,  
13 Ph.D., taken at Four Embarcadero Center, 17th  
14 Floor, San Francisco, California, on Friday,  
15 December 15, 2017 at 9:48 a.m.  
16  
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19  
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21

22 REPORTED BY:

23 Mary Hogan CSR No. 05386  
24  
25

1 MS. SCARLETT: Objection to form.

2 Q (By Ms. Rodewald) Do you know the  
3 serial number of the drive?

4 MS. SCARLETT: Objection, form.

5 THE WITNESS: Not off the top my head.  
6 I haven't memorized it.

7 Q (By Ms. Rodewald) In this action, in  
8 your report, your declaration, you do not opine  
9 that the ST3000DM001 drives had any specific  
10 defect, do you?

11 MS. SCARLETT: Objection to form.

12 THE WITNESS: In my report I provide  
13 exemplary information of a number of different  
14 defects.

15 Q (By Ms. Rodewald) Did you identify any  
16 specific defect that you opine is common to the  
17 ST3000DM001 drives at issue in this litigation?

18 MS. SCARLETT: Objection to form.

19 THE WITNESS: So my role in this was  
20 not to identify a common defect.

21 There certainly are things that appear  
22 over and over again as issues in the production of  
23 the Seagate ST drives.

24 My role here was to identify whether  
25 or not the annualized failure rates, or AFR, was

1 actually within Seagate's claim of being less than  
2 1 percent or less than .3 percent as they  
3 advertised in their marketing materials.

4 Q (By Ms. Rodewald) What percentage of ST  
5 drives sold to consumers failed?

6 MS. SCARLETT: Objection to form.

7 THE WITNESS: I don't know.

8 Q (By Ms. Rodewald) But it is your  
9 opinion that they had a higher failure rate than 1  
10 percent?

11 A The data that I've reviewed indicates  
12 that from the beginning of the production process  
13 Seagate knew that this drive had an annualized  
14 failure rate of more than .34 and more than  
15 1 percent.

16 Q Is it your opinion that the ST drives  
17 in consumers' hands failed at a higher rate than 1  
18 percent?

19 MS. SCARLETT: Objection to form.

20 THE WITNESS: So I don't -- I can't  
21 opine on what is in consumers' hands. I have not  
22 seen the data for consumers' hands.

23 Q (By Ms. Rodewald) Is it your opinion  
24 that the ST drives for the entire period from 2011  
25 to 2016 had the same failure rate?

1 MS. SCARLETT: Objection to form.

2 THE WITNESS: It is my opinion that  
3 they did not.

4 Q (By Ms. Rodewald) And what were the  
5 differences? Did the failure rate vary over time?

6 MS. SCARLETT: Objection to form.

7 THE WITNESS: During the time and the  
8 data that I examined, the failure rate was  
9 constantly increasing and it was above 1 percent.

10 Q (By Ms. Rodewald) What do you mean by  
11 "constantly increasing"?

12 A Let's go into my expert report and  
13 I'll show you. Please, let's do it.

14 Q Hold on. I think this is a very  
15 simple question.

16 A I wanted to answer you accurately.

17 Q When you say "constantly increasing,"  
18 do you mean that hard drives manufactured in 2014  
19 had a higher failure rate than hard drives  
20 manufactured in 2011?

21 A I'm going to answer you out of my  
22 expert report.

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24 [REDACTED]

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1 report and flush them out, but I'm not sure off  
2 the top my head if the eight months is referring  
3 to the start of mass production for the -- for the  
4 SBS drives or the bare drives, so I -- I would  
5 have to go back and review my report to see that.

6 Q Okay.

7 A And I'm trying to answer you --

8 Q No.

9 A -- as factually as I can.

10 Q I understand. And we can look at some  
11 documents later, you know, later in the  
12 deposition.

13 I'm trying to get some general  
14 overview now and trying to understand some  
15 concepts, and then we'll go back and tie down some  
16 of these things.

17 Okay. Do you know what percentage of  
18 the named plaintiffs' drives failed?

19 MS. SCARLETT: Objection to form.

20 THE WITNESS: I'm sorry. The named  
21 plaintiffs being the parties who brought the suit?

22 Q (By Ms. Rodewald) Correct.

23 A I do not, but I can assume that they  
24 wouldn't bring suit unless their drives had  
25 failed.

1 Q But you don't know what percentage?

2 MS. SCARLETT: Objection, form.

3 THE WITNESS: I don't know how many  
4 drives they had, when they failed, or how many  
5 failed.

6 Q (By Ms. Rodewald) Okay. Do you want to  
7 go for a little further before we take a break?

8 A No. We can keep going.

9 Q Is it your understanding that in the  
10 hard drive industry hard drives are produced for  
11 different intended uses?

12 A So I'm -- I'm not really sure I  
13 understand what you're asking.

14 Q Well, let me ask you this: Do hard  
15 drive manufacturers such as Western Digital or  
16 Seagate or -- I forget Hitachi's current name.  
17 It's HG --

18 A -- ST.

19 Q HGST. Is it your understanding that  
20 they manufacture some hard drives to be used  
21 inside desktop computers, they manufacture other  
22 hard drives to be used in what are called  
23 enterprise or mission critical applications, and  
24 other hard drives to be used inside DVRs and  
25 TiVos, or to be used inside laptops?



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1 phase referred to as pilot exit.

2 Q Okay.

3 A And accordingly, Seagate test drives  
4 pre-release, as well as post-release, so it's  
5 right there where the drive is released that  
6 Seagate will be collecting and analyzing field  
7 data to spot trend and determine whether a drive  
8 is meeting its anticipated rate of field returns.

9 Q So after this release it's your  
10 understanding that the drive is continued -- hard  
11 drive companies in general and Seagate included  
12 continue to put the drives through ongoing  
13 testing; is that correct?

14 A Yes.

15 Q Okay. And is it your understanding  
16 that Seagate called that ongoing activity ongoing  
17 reliability testing or ORT?

18 MS. SCARLETT: Objection, form.

19 THE WITNESS: I have seen the term ORT  
20 and there may be some other testing that they've  
21 done as well.

22 Once the drive does go into  
23 manufacturing, it would typically use the same  
24 components that were qualified on the drive at the  
25 time it was being designed and before it was being

1 handed off from the pilot exit and the quality  
2 exit.

3 [REDACTED]

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11 Q (By Ms. Rodewald) Have you ever been  
12 involved in the production of a hard drive that  
13 was produced in volume of millions?

14 A Yes.

15 Q And when was that?

16 A That was at Quantum.

17 Q Okay.

18 A In the 1980s -- sorry, 1990s as well.

19 Q And those being hard drive --  
20 particular models of the hard drives were being  
21 produced in millions of numbers a year?

22 A Yes.

23 Q And were those being produced at a  
24 number of factories in a number of different  
25 countries as well?

1           A       No. I believe we had one major  
2       manufacturing facility.

3           Q       Was it Quantum's practice at the time  
4       to qualify multiple sources for components?

5           A       Yes. Quantum would qualify multiple  
6       sources before the mass production of the drive  
7       began.

8           Q       Before they started ramping production  
9       they would qualify multiple sources?

10          A       Yes.

11          Q       And is it possible that a company  
12       would qualify multiple sources during the ramp  
13       phase?

14               MS. SCARLETT: Objection, form.

15               THE WITNESS: It not something that  
16       I've ever seen.

17          Q       (By Ms. Rodewald) How many drives have  
18       you been involved with taking from design through  
19       approval for sale through a ramp?

20          A       Dozens.

21          Q       And was that all at Quantum?

22          A       That was primarily at Quantum, and  
23       then I had also done consulting work where I  
24       assisted other disk drive companies.

25          Q       When was that?

1           A       In the back of my resume, I think it  
2       was '83 to '86. Let's see. It may have been  
3       earlier or later.

4                    So when I was at I/O Xel, '86 to 1990,  
5       and so I worked with companies like Quantum,  
6       Prium, Maxtor and Iomega and assisted them in  
7       taking their product through this process.

8           Q       And you were involved in qualifying  
9       component suppliers?

10          A       I actually at the time developed  
11       something called the SCSI benchmark tester and  
12       that was the first patent that I received, and  
13       these companies used the tester to evaluate some  
14       of the suppliers of some of their components.

15          Q       So you're saying that it's not -- it's  
16       not standard practice to continue qualifying new  
17       suppliers of parts during the ramp phase of  
18       production?

19                   MS. SCARLETT: Objection, form.

20                   THE WITNESS: I'm not familiar with  
21       that, and I would think it's somewhat dangerous.

22          Q       (By Ms. Rodewald) Why?

23          A       Because you're about to start building  
24       millions of things with parts that you don't  
25       really know very much about.

1 Q That's the purpose of the

2 qualification process, isn't it?

3 MS. SCARLETT: Objection, form.

4 THE WITNESS: That's why I believe the

5 qualification process should occur before the mass

6 production.

7 Q (By Ms. Rodewald) During ongoing  
8 reliability testing or whatever you want to call  
9 it -- let me see.

10 Have you ever been involved in that  
11 process, the process of either doing or  
12 supervising, directly supervising, ongoing  
13 reliability testing?

14 A Yes.

15 MS. SCARLETT: Objection to form.

16 THE WITNESS: Sorry. Yes.

17 Q (By Ms. Rodewald) When was that?

18 A That was again at Quantum.

19 Q And can you please explain what your  
20 role was with regard to ongoing reliability  
21 testing?

22 A So at Quantum we were very interested  
23 in what the failure rates were, and my group in  
24 systems engineering was responsible, as I said,  
25 for drives that were targeted for streaming

1 Q Okay. So you're saying that  
2 head-related failures -- you are grouping them all  
3 together as being common; is that correct?

4 A No, that is not what I'm saying.

5 Q Okay. So why would it matter whether  
6 or not something is called a head-related failure?

7 It sounds to me like you're saying  
8 just because something is called a head-related  
9 failure you cannot make a conclusion one way or  
10 another whether it has anything in common with a  
11 different head-related failure; is that correct?

12 MS. SCARLETT: Objection, form.

13 THE WITNESS: Okay. So I didn't  
14 understand your first question and I definitely  
15 don't understand your second question.

16 Q (By Ms. Rodewald) Okay.

17 A So if you could rephrase them for  
18 me --

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6 Q What you reviewed -- you reviewed the  
7 documents Seagate produced; is that correct?

8 MS. SCARLETT: Objection, form.

9 THE WITNESS: I reviewed a lot of  
10 Seagate documents. Which are you talking about?

11 Q (By Ms. Rodewald) Why are you saying  
12 you don't have the data?

13 MS. SCARLETT: Objection to form.

14 THE WITNESS: Because I did not review  
15 any data based on customer failures in the file.  
16 Seagate did not produce that in this case.

17 Q (By Ms. Rodewald) So Paragraph 34, you  
18 go on to state, "The data used to calculate AFR  
19 and MTBF is usually obtained by conducting  
20 accelerated life testing equivalents of running a  
21 large population of drives 24 hours per day and  
22 seven days per week for at least 30 days in  
23 special test chambers which subject the drives to  
24 extreme conditions, such as temperature and  
25 voltage levels above and below the values listed

1 manufacturer and has their brand on it is that if  
2 they are manufacturing disk drives and their disk  
3 drives are either 2400 power-on hours or 8760  
4 power-on hours, that the disk drive that's inside  
5 the enclosure that I buy from them will either be  
6 2400 power-on hours per year or 8760 power-on  
7 hours per year.

8 I have never seen any piece of  
9 information that suggests that customers should  
10 only use their Seagate branded storage solutions  
11 for less than 2400 hours a year, never seen it.  
12 This is the first time today.

13 Q (By Ms. Rodewald) And you have no idea  
14 how long the average consumer uses an external USB  
15 drive, correct?

16 A I don't think that matters.

17 MS. SCARLETT: Objection to form.

18 THE WITNESS: I don't think that  
19 matters.

20 MS. RODEWALD: I think we're up to  
21 Exhibit 10.

22 (Exhibit 10 marked.)

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25 [REDACTED]

1 Q (By Ms. Rodewald) Didn't he say that  
2 there is a correlation between the amount of  
3 workload stress and the product's propensity to  
4 show constant failure rate or wear-out?

5 MS. SCARLETT: Objection, form.

6 THE WITNESS: He did say that.

7 Q (By Ms. Rodewald) Okay. So that would  
8 mean that the higher workload products are the  
9 ones that have -- are correlated with this  
10 propensity to show Beta equals greater than 1,  
11 correct?

12 MS. SCARLETT: Objection, form.

13 THE WITNESS: I don't think that's  
14 what he said.

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5 Q So are all of the bases for your  
6 opinions that Seagate did not use the right Beta  
7 value stated in your report?

8 MS. SCARLETT: Objection, form.

9 THE WITNESS: I think there are lots  
10 of opinions that are floating around in my head,  
11 some of which are scattered, some of which may or  
12 may not make sense.

13 I tried to write a report that was not  
14 comprehensive but one that was exemplary and  
15 explained the basis for my opinions and provided  
16 the evidence that I had for Seagate not reaching  
17 their AFR target of 1 percent.

18 Q (By Ms. Rodewald) Do you know of any  
19 evidence, sitting here today, that you did not  
20 include in your report?

21 MS. SCARLETT: Objection, form.

22 THE WITNESS: In the back of my report  
23 here you will see a long list of numbers.

24 I didn't print every single one of  
25 these, and I didn't actually cite every single one

1 drives into mass production in Japan.

2 Quantum designed the drives and then  
3 would send teams of manufacturing engineers to  
4 Japan to implement the production of the drives,  
5 do the preproduction builds, bring the  
6 preproduction drives back for testing in Milpitas,  
7 California, calculate things like AFR, look at  
8 what the yield would be, and when the drive was  
9 deemed sufficiently mature, it would go into mass  
10 production.

11 And one of the levels was -- you know,  
12 is the drive going to be able to achieve a  
13 first-pass yield at the start of mass production.

14 Q You are not one of the manufacturing  
15 engineers, correct?

16 A I was not a manufacturing engineer,  
17 but I had more than enough friends in  
18 manufacturing engineering, so I got to hear all  
19 the relevant stories, and by the time I was done  
20 at Quantum, I was in the management ranks, so I  
21 regularly got updates about what was going on and  
22 what was on the critical path, what types of  
23 problems we're seeing, what we're going to do to  
24 get the yield up prior to mass production.

25 Q But Quantum was not responsible for



1 getting the yield up, was it?

2 A Quantum was. Quantum acted hand in  
3 hand with MKE to identify and correct any issues  
4 prior to mass production, so once the drive went  
5 into mass production, it was being cranked out by  
6 the millions.

7 And this is at a time before the  
8 internet, so we didn't have the ability to issue  
9 firmware updates twice a year or three times a  
10 year like Seagate was doing during the life of the  
11 Grenada product.

12 We had to get it right the first time,  
13 and we qualified all of our vendors before we went  
14 into mass production.

15 We built prototype drives with  
16 combinations of each of the vendors' components to  
17 make sure that they all worked together.

18 We did our AFR life-cycle testing. We  
19 did all of -- I'm sorry, the accelerated  
20 life-cycle testing for AFR.

21 We did all these things prior to  
22 getting the drive into production, and it was only  
23 when both Quantum and MKE were satisfied with the  
24 results that the drive was actually released into  
25 mass pro.

1 We would never change or try to put a  
2 new part on a drive that wasn't already  
3 qualified --

4 Q Okay.

5 A -- once it went into mass pro.

6 Q So you never changed -- after the  
7 drive went into mass production, you never  
8 qualified new suppliers for parts?

9 MS. SCARLETT: Objection, form.

10 THE WITNESS: We didn't -- as far as I  
11 know, we used the suppliers that were qualified  
12 during the design phase and used their parts to  
13 make the product, and we made sure that those  
14 parts were interchangeable with other parts from  
15 other manufacturers.

16 So we avoided swapping out a part in  
17 the middle of production with a new part that  
18 hadn't been qualified with all the other parts.

19 A disk drive has a tremendous amount  
20 of parts inside of it. It's a complicated device.

21 We did, however, take new suppliers  
22 and look at qualifying them into the production to  
23 the next production run of a follow-on product.

24 So if we had a bump in aerial density,  
25 if we were going to add some new heads, if we were

1 going to do something different or target a  
2 different market, we would use that as an  
3 opportunity to qualify a new vendor, knowing that  
4 the original drive, in the case of something like  
5 a classic drive, was already solid and stable.

6 We would take a look at what we could  
7 do in the next generation to add different  
8 components into that, get some more capacity out  
9 of it, get a little more performance, maybe some  
10 more reliability.

11 [REDACTED]  
12 [REDACTED]  
13 [REDACTED]  
14 [REDACTED]  
15 [REDACTED]  
16 [REDACTED]  
17 [REDACTED] [REDACTED]  
18 [REDACTED] [REDACTED]  
19 [REDACTED]  
20 [REDACTED]  
21 [REDACTED]  
22 [REDACTED]  
23 [REDACTED]  
24 [REDACTED]  
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1 [REDACTED]  
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6 [REDACTED]  
7 [REDACTED]  
8 [REDACTED]  
9 [REDACTED]  
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18 [REDACTED]  
19 [REDACTED]  
20 [REDACTED]  
21 [REDACTED]  
22 [REDACTED]  
23 [REDACTED]  
24 [REDACTED]  
25 [REDACTED]

1 generating two or more engineering change requests  
2 every single day and that's enough to overwhelm an  
3 organization.

4 Q (By Ms. Rodewald) So I have a pretty  
5 simple question here. I hope we can figure it out  
6 together.

7 You don't cite any documents in  
8 connection with Figures 19 and 20, and so I'm  
9 wondering if you can tell me what the actual  
10 documents are that you got the data from.

11 A So the documents are the documents  
12 like this FED SEAG0002724, and all of these  
13 documents that represent the monthly engineering  
14 change request -- they are called the engineering  
15 change request logs.

16 Q Okay.

17 A And it's either this document with a  
18 lot of tabs or it's this document and the  
19 subsequent documents.

20 Q So I'm pretty sure that that document  
21 only had one tab, so that would mean that there  
22 are a bunch more of those, but you didn't cite the  
23 Bates numbers in connection with these two  
24 figures.

25 A We can go back and do that if you need

1 that.

2 I'm sorry. That would have been an  
3 oversight, and you know, I hope that we included  
4 those in the disclosure in the back --

5 Q Okay.

6 A -- of all the Bates numbers, but if we  
7 need to, we can pull those out and get them for  
8 you individually.

9 Q Yeah. We were just really trying to  
10 figure out how you made these pretty pictures.  
11 Couldn't figure it out.

12 Now you've mentioned customer code

13 ECRs, and what does that mean?

14 A So a customer code, my understanding  
15 is that would be a change that was implemented at  
16 the request of a specific customer.

17 Q And what might those be?

18 A It's too loud. It's -- you know, it's  
19 got the wrong color sticker on it, it doesn't  
20 accept this vendor unique command that we want.

21 Q Okay.

22 A We wanted a blue LED instead of a red  
23 LED. It's that kind of stuff when you're dealing  
24 with customers.

25 But primarily the customer codes are

1 have any knowledge about the information that was  
2 provided to me.

3 [REDACTED]

4 [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 [REDACTED]

15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]

19 [REDACTED]

20 [REDACTED]

21 [REDACTED]

22 [REDACTED]

23 [REDACTED]

24 [REDACTED]

25 [REDACTED]

1 [REDACTED]

2 [REDACTED]

3 [REDACTED]

4 [REDACTED] [REDACTED] [REDACTED]

5 [REDACTED] [REDACTED] [REDACTED]

6 [REDACTED]

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11 [REDACTED] [REDACTED]

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15 [REDACTED]

16 [REDACTED]

17 [REDACTED] [REDACTED] [REDACTED]

18 [REDACTED]

19 [REDACTED]

20 [REDACTED]

21 [REDACTED] [REDACTED]

22 [REDACTED] [REDACTED]

23 [REDACTED]

24 [REDACTED]

25 [REDACTED]



1 MS. SCARLETT: Objection to form.

2 THE WITNESS: I cited this document as  
3 an AFR of 0.34.

4 I don't believe I said it was the only  
5 document Seagate had ever produced, but, again,  
6 I'm presenting exemplary information here, not  
7 comprehensive information.

8 Q (By Ms. Rodewald) Right now do you know  
9 of any other evidence that Seagate published an  
10 AFR of 0.34 percent in April 2011?

11 MS. SCARLETT: Objection to form.

12 THE WITNESS: Off the top of my head,  
13 I do not, but I seem to remember advertising  
14 different numbers for the AFRs.

15 So the data sheets at some point said  
16 0.34 percent, and that was here on Paragraph 53  
17 and 54.

18 So I'm sorry, the data sheet remained  
19 unchanged, but Seagate continued to advertise the  
20 AFR of the ST3000DM001 on its website as 0.34,  
21 less than 1 percent, until at least January 2013.

22 Q (By Ms. Rodewald) Do you think it  
23 requires your expertise to review the Seagate  
24 website and determine what it said about AFR?

25 MS. SCARLETT: Objection to form.

1 THE WITNESS: I'm sorry. I don't  
2 understand your question.

3 Q (By Ms. Rodewald) Do you think it  
4 requires your expertise to look at Seagate's  
5 website and determine what it said about AFR?

6 A I think --

7 MS. SCARLETT: Objection to form.

8 THE WITNESS: I think that any person  
9 could look at Seagate's website and see what it  
10 says about AFR.

11 Q (By Ms. Rodewald) Okay. Do you think  
12 that an ordinary consumer could look at Seagate's  
13 website and understand what the AFR meant?

14 A So Seagate changed from MTBF to AFR to  
15 make it easier for consumers to understand what it  
16 meant, because consumers had a hard time  
17 understanding what meantime between failure was on  
18 a large population of drives, and they had an  
19 easier time of understanding what annual failure  
20 rate meant.

21 Q But you think that an ordinary  
22 consumer could look at Seagate's website and  
23 understand the information presented there?

24 A I don't see any reason why they  
25 couldn't.

1 Q And what about with regard to the  
2 product manual and the data sheets that you cite  
3 in your report?

4 Is this something that requires your  
5 expertise to understand?

6 MS. SCARLETT: Objection to form.

7 THE WITNESS: I think that the product  
8 manuals and the data sheets are written to be as  
9 simplistic as possible.

10 Q (By Ms. Rodewald) Okay.

11 A So I would say no, they don't require  
12 a Ph.D. in computer engineering to understand  
13 them.

14 MS. RODEWALD: Okay. I believe that's  
15 all I have for now.

16 It seems that you have reserved the  
17 right to add to your opinions and we definitely  
18 reserve the right to continue the deposition of  
19 Mr. Hospodor if he revises or adds to his  
20 opinions.

21 I would like to mark this transcript  
22 as confidential, please.

23 MS. SCARLETT: No questions from the  
24 Plaintiffs.

25 THE VIDEOGRAPHER: This marks the end

1  
2 I, the undersigned, a Certified Shorthand  
3 Reporter for the State of California, do hereby  
4 certify that the witness in the foregoing  
5 deposition was by me first duly sworn to testify  
6 to the truth in the cause herein entitled; that  
7 said deposition was taken at the time and place  
8 herein stated; that the testimony of said witness  
9 was reported by me and thereafter transcribed  
10 under my direction into typewriting; that the  
11 foregoing is a full, complete and true record of  
12 said testimony;

13 I further certify that I am not of  
14 counsel or attorney for either or any of the  
15 parties in the foregoing matter, nor in any way  
16 interested in the outcome of the cause herein  
17 named.

18 IN WITNESS WHEREOF, I have hereunto  
19 set my hand this 17th day of December, 2017.  
20

21 \_\_\_\_\_  
22 MARY HOGAN, CSR NO. 05386  
23  
24  
25